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A.D. 1884, 23rd MAY. N° 8132.

An Improved Manufacture of Non-alcoholic Beverages from  
Grapes or other Fruits.

PROVISIONAL SPECIFICATION.

I AGATHA COLOMBA LAURA WEIGEL of Brighton in the County of Sussex, Gentlewoman married do hereby declare the nature of the said invention for "AN IMPROVED MANUFACTURE OF NON-ALCOHOLIC BEVERAGES FROM GRAPES OR OTHER FRUITS" to be as follows:—

5 This invention relates to the manufacture, from grapes or other fruits of beverages containing all the constituents and having all the properties of good, genuine fermented wine, with the sole exception of the alcohol.

For this purpose, I take ripe grapes, by preference of such kinds as are used for the manufacture of Champagne and other sparkling wines. The grapes are  
10 crushed and pressed in the usual way, and the juice is subjected to the first stage of fermentation until its cloudiness has disappeared. The liquor is then drawn off from the sediment and fined with isinglass or by any other known means, and the clear fluid is pumped into a vacuum pan, where it is subjected to a gentle heat for the purpose of evaporating all the alcohol from it. The evaporation may also  
15 be effected without a vacuum, but, as the heat in this case would have to be increased, the product might have an objectionable flavor, whereas by the use of a vacuum pan, the heat need not exceed 150° to 160° Fahr., and the product would therefore retain its freshness of taste without having its flavour altered by heating. During the evaporation the ethers are first distilled off and collected in a separate  
20 vessel, and then the alcohol which is condensed by worms such as are used with ordinary stills. This alcohol, from which the ethers may be completely separated by fractional distillation, being of a very pure character, is valuable for medicinal and chemical purposes.

After the liquor has thus been liberated from every vestige of alcohol, it is run  
25 off by a cock or valve at the bottom of the pan, into a set of worms kept cool by a continuous stream of cold water. The liquor thus cooled is passed through a filtering apparatus so constructed as to exclude air into an air-tight reservoir embedded in ice or placed in a refrigerating chamber, so as to keep the temperature in it just above freezing point. After the liquor has entered this reservoir, the  
30 ethers evaporated from it during distillation are added to it along with a certain proportion of unfermented condensed grape or fruit juice, specially prepared for this purpose in the following manner:—Fresh ripe grapes are crushed and the

[Price 4d.]



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crushed mass is subjected to the action of a filter-press. The juice that runs off is, if necessary, strained through a filter until quite clear, and is as soon as possible boiled down to a consistence of a thick syrup or jelly. In this state, the juice may be kept in a close vessel in a cool atmosphere until it is wanted for the purpose described. The proportion of this condensed juice to be added to the fluid 5 in the reservoir varies according as a dry or a sweet beverage is desired, and also according to the sweetness of the must condensed. After the addition of the condensed must with the ethers as above mentioned, the liquor is stirred by a revolving agitator, worked from the outside, so that no air enters the reservoir.

The liquor thus prepared can be bottled as a "still" beverage. 10

For the purpose of manufacturing an aerated or sparkling beverage the juice is drawn off from the reservoir into an apparatus such as is employed for aerating liquors, and, being impregnated with carefully prepared carbonic acid gas, it is bottled in the usual way.

The whole operation and apparatus above described are so arranged that the 15 juice, from the moment it is placed in the vacuum pan, until it is bottled, is entirely excluded from contact with the air, so that no atmospheric germs can contaminate it or create fermentation.

Instead of grape juice as above described, I may employ juices of other fruits, such as apples, pears, currants etc., or of dried fruits, such as raisins, or dates or 20 the like; I may employ ready made wine, cider etc., and evaporate the alcohol therefrom and treat the liquor as above described.

The condensed must or fruit juice, used for sweetening, may be flavoured by addition of aromatic or sweetening substances or essences.

For the purpose of manufacturing a "tonic" or "medicinal" beverage, the grape 25 or fruit juice may have added to it infusions or extracts or vegetable alkaloids or other preparations as desired.

Dated this 23rd day of May 1884.

ABEL & IMRAY,  
Agents for the Applicant, 30  
28, Southampton Buildings,  
London, W.C.



*Weigel's Improved Manufacture of Non-alcoholic Beverages from Grapes, &c.*

## COMPLETE SPECIFICATION.

I, AGATHA COLOMBA LAURA WEIGEL of Brighton in the County of Sussex, Gentlewoman Married do hereby declare the nature of my invention for "AN IMPROVED MANUFACTURE OF NON-ALCOHOLIC BEVERAGES FROM GRAPES OR OTHER FRUITS" and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to the manufacture, from grapes or other fruits, of beverages containing the constituents and having the properties of good, genuine, fermented wine, with the exception of the alcohol.

For this purpose, I take ripe grapes, by preference of such kinds as are used for the manufacture of Champagne and other sparkling wines. The grapes are crushed and pressed in the usual way, and the juice is subjected to the first stage of fermentation until its cloudiness has disappeared. The liquor is then drawn off from the sediment, and fined with isinglass or by any other known means, and the clear fluid is pumped into a vacuum pan, where it is subjected to a gentle heat for the purpose of evaporating all the alcohol from it. The evaporation may also be effected without a vacuum, but, as the heat in this case would have to be increased, the product might have an objectionable flavour, whereas by the use of a vacuum pan, the heat need not exceed 150° to 160° Fahr., and the product would therefore retain its freshness of taste without having its flavour altered by heating. During the evaporation, the ethers are first distilled off and collected in a separate vessel, and then the alcohol, which is condensed by worms such as are used with ordinary stills. This alcohol, from which the ethers may be completely separated by fractional distillation, being of a very pure character, is valuable for medicinal and chemical purposes.

After the liquor has thus been liberated from every vestige of alcohol, it is run off by a cock or valve at the bottom of the pan, into a set of worms kept cool by a continuous stream of cold water. The liquor thus cooled is passed through a filtering apparatus, so constructed as to exclude air, into an air-tight reservoir embedded in ice or placed in a refrigerating chamber, so as to keep the temperature in it just above freezing point. After the liquor has entered this reservoir, the ethers evaporated from it during distillation are added to it along with a certain proportion of unfermented condensed grape or fruit juice, specially prepared for this purpose in the following manner;—Fresh ripe grapes are crushed and the crushed mass subjected to the action of a filter-press. The juice that runs off is, if necessary, strained through a filter until quite clear, and is, as soon as possible, boiled down to a consistence of a thick syrup or jelly. In this state, the juice may be kept in a close vessel in a cool atmosphere until it is wanted for the purpose described. The proportion of this condensed juice to be added to the fluid in the reservoir varies according as a dry or a sweet beverage is desired, and also according to the sweetness of the must condensed. After the addition of the condensed must with the ethers as above mentioned, the liquor is stirred by a revolving agitator, worked from the outside, so that no air enters the reservoir.

The liquor thus prepared can be bottled as a "still" beverage.

For the purpose of manufacturing an aerated or sparkling beverage, the juice is drawn off from the reservoir into an apparatus such as is employed for aerating liquors, and, being impregnated with carefully prepared carbonic acid gas, is bottled in the usual way.

The whole operation and apparatus above described are so arranged that the juice, from the moment it is placed in the vacuum-pan, until it is bottled, is



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entirely excluded from contact with the air, so that no atmospheric germs can contaminate it or create fermentation.

Instead of grape juice as above described, I may employ juices of other fruits, such as apples, pears, currants etc.; or of dried fruits, such as raisins, or dates or the like; or I may employ ready made wine, cider etc., and evaporate the alcohol 5 therefrom and treat the liquor as above described.

The condensed must or fruit juice, used for sweetening, may be flavoured by addition of aromatic or sweetening substances or essences.

For the purpose of manufacturing a "tonic" or "medicinal" beverage, the grape or fruit juice may have added to it infusions or extracts, or vegetable alkaloids or 10 other preparations as desired.

Although I have herein described what I consider to be the best process for carrying out my invention, it may be readily understood that when great excellence of product is not required, certain parts of the process may be simplified. For example the products of distillation may be allowed to escape or may be all 15 collected together, the careful filtering and cooling of the liquor may be dispensed with, and also the precautions for exclusion of air, without materially affecting the quality of the product.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what 20 I claim is:—

The manufacture of non-alcoholic beverages by fermenting juice of grapes or other fruits, distilling the spirit therefrom, and mingling fruit juices and flavouring ingredients with the resulting liquor, substantially as herein described.

Dated this 23rd day of October 1884.

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ABEL & IMRAY,  
Agents for the Applicant,  
28, Southampton Buildings,  
London, W.C.

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LONDON: Printed by EYRE AND SPOTTISWOODE,  
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- 10 crushed and pressed in the usual way, and the juice is subjected to the first stage of fermentation until its cloudiness has disappeared. The liquor is then drawn off from the sediment and fined with isinglass or by any other known means, and the clear fluid is pumped into a vacuum pan, where it is subjected to a gentle heat for the purpose of evaporating all the alcohol from it. The evaporation may also
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- After the liquor has thus been liberated from every vestige of alcohol, it is run
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The liquor thus prepared can be bottled as a "still" beverage.

For the purpose of manufacturing an aërated or sparkling beverage, the juice is drawn off from the reservoir into an apparatus such as is employed for aërating liquors, and, being impregnated with carefully prepared carbonic acid gas, is bottled in the usual way.

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